

## **DRAFT MEETING SUMMARY (v.0)**

*DRAFT - NOT APPROVED BY COMMITTEE*

### **HANFORD ADVISORY BOARD**

*Tank Waste Committee*

*May 22, 2003*

*Richland, WA*

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*This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.*

#### **Welcome and Introductions**

Doug Huston, Committee Chair, opened the meeting and reviewed the agenda.

#### **Current Department of Energy-Office of River Protection (DOE-ORP) Activities**

Leif Erickson, DOE-ORP, discussed the stop-work order announced on May 9, 2003. DOE-ORP received one-hour advance notice that this order would be issued. The element of the order that has caused the most concern is the inability to generate mixed waste that does not have a disposition path in the next 12 months. If DOE-ORP does not comply with this order, there are both criminal and civil sanctions attached. However, there are still broad areas of agreement with the regulators on how cleanup should be approached. DOE-ORP met with the Washington State Department of Ecology (Ecology) about ten days ago and outlined what the impacts of the stop-work order would be. Ecology did not intend to curtail certain activities; however, in their letter, there were no exclusions. DOE-ORP is optimistic they can work through the differences. ORP managers have instructed the contractors to be creative in order to proceed with work while still complying with the order. Some activities have been curtailed but they have worked hard to do the most work possible. The impacts to activities in the near term are relatively minor. Leif stressed that working through to an agreement with Ecology is imperative.

### **Regulator Perspective**

Suzanne Dahl, Ecology, stated the one line that caused the issue was meant to say “stop generating the waste that there is not a treatment path for.” However, if the sentence in question is taken in context of the paragraph above it, the same understanding is achieved. The intent was not to stop interim stabilization or tank characterization.

Suzanne stated the intent of the second part of the order was to address the waste being generated which will not be treated but will be transferred to the Central Waste Complex. When the milestones related to this came to an end, no others were put in place due to financial and other reasons. Therefore, DOE’s Richland Office (DOE-RL) no longer treated that waste. Suzanne added there have been great efforts on the part of DOE-ORP and Ecology to separate the disagreement from the pathways in the tank farms. A lot of work has been done to keep that moving forward.

### **Committee Discussion**

- Several committee members asked what the most significant impact to cleanup would be if the order stands. Leif answered if there is not disposition pathway in the next 12 months for those wastes headed to the lab or central complex, then the activity related to those wastes could not be carried out. This would cause a recoil effect on the site. When the doors of these facilities close, it limits what can be done at Hanford.
- Maynard Plahuta asked if DOE consulted with the state on the order. Leif responded that because the order was given with no prior warning, there was not a chance to confer with the state.
- Doug Huston commented this appears to be “malicious compliance.” He believes consultations should have taken place before a stop work order was issued. Doug would like the Hanford Advisory Board (Board) to voice their opinion on this matter.
- Several committee members pointed out the cover letter Ecology sent with the order stated DOE should call if there were any questions. DOE never called. To the public, this appears to be an escalation of a battle of wills induced by DOE Headquarters (DOE-HQ). It was the responsibility of DOE to make the call. If the only thing to come out of this is these groups are back talking then that is good. Leif responded there is a lot of good ongoing dialogue; on a local level this has always been done well but not so from a national level.
- Several committee members commented it appears the Tri-Party Agreement (TPA) is falling apart. It appears there is a major disrespect towards the TPA coming from DOE-HQ.

### **Technetium-99 (Tc-99) Removal in the Waste Treatment Plant (WTP)**

Rob Gilbert, DOE-ORP, discussed Technetium-99 (Tc-99) removal in the Waste Treatment Plant (WTP) and DOE-ORP’s decision to eliminate removal from the pretreatment facility. Tc-99 is a fission product that was generated in Hanford’s

production reactors and is a low energy Beta emitter. It is easily shielded. To date, 33,500 curies (Ci) of Tc-99 have been processed. The total anticipated inventory is 25,500 Ci, which accounts for <0.02% of the total activity in the tank farms. As Tc-99 is 0.02% of the tank farm activity, it is not economically practical to use separation. The cost per curie to separate Tc-99 is estimated at \$29,000.

There are many drivers to separate Tc-99. In the Low-Activity Waste (LAW) disposal facility performance assessment, Tc-99 was found to be the predominant radionuclide after other separations were performed. While early performance assessment work indicated Tc-99 separation might be needed to demonstrate acceptable performance, current work demonstrates performance objectives are met without separations.

Separation of the Tc-99 is not required to meet incidental waste criteria and the Nuclear Regulatory Commission (NRC) concurred with this analysis in 1997. A performance assessment was completed to model the site and disposal system performance to predict long-term impacts to human health and the environment. The assessment was completed to 1,000 years and to 10,000 years. The long-term impacts were based on the 2001 immobilized LAW (ILAW) Performance Assessment (DOE/ORP-2000-24) and both Tc-99 separations and no separations were considered. The assessment was reviewed by Ecology and copies were sent to the Defense Nuclear Facility Safety Board (DNFSB) and the NRC.

BNI is tasked to prepare modifications for the environmental permits. The Resource Conservation and Recovery Act (RCRA) permit is scheduled for approval by October 2004. The Radioactive Air Emissions License is scheduled for approval by March 2004.

### **Regulator Perspective**

Suzanne Dahl explained that no matter how it is stated, 86% of the technecium curies will be disposed of on the Central Plateau. In order to remain protective of groundwater, the location must remain the 200 East Area. This means any alternative waste form must be as good as glass with no Tc-99 removal. While this may not be the wisest decision, it will not create an environmental hazard above the drinking water standard. However, Suzanne commented Ecology would like to see an environmental analysis of the effects of the Tc-99 in and out of the processing. This would allow the effects to be seen from a cumulative standpoint.

### **Committee Discussion**

- Al Boldt commented the agreement with the NRC is provisional; any changes to processing technologies would void the agreement. If supplemental technologies are incorporated, DOE must return to the NRC and come to a new agreement.
- Whether the amount is .02 percent or greater, there will still be 25,000 ci, which originally was to go to Yucca Mountain, which will now be staying at Hanford. This

was identified in both the 1998 and 2001 performance assessments as the major contributor to groundwater contamination.

- The economic analysis illustrates this decision affects not just treatment but also disposition. If the material instead were disposed of at 200 West, there would need to be another performance assessment that could reach a different conclusion.
- Is the \$29,000 figure for separations only? Rob responded that the \$29,000 was the treatment cost only. The \$300 million figure was for the life cycle cost. This is only for the removal cost and does not include disposal.
- To what degree will cesium be removed? Robert responded that much more cesium is being removed than what was addressed in the NRC report. This is being done because the Immobilized Low-Activity Waste (ILAW) building will be less shielded.

### **Transuranic Waste in the Tanks**

ORP requested the Board provide advice on the effort to determine if some of the tanks contain only transuranic (TRU) waste. Doug Huston presented a brief tutorial for the committee on the major differences between characterization and classification, and emphasized that the TRU issue is a question of characterization, not reclassification.

Steve Wiegman, DOE-ORP, commented this endeavor is viewed as a good opportunity to package some of the waste for shipment well ahead of what was expected. DOE would be happy to have the Board's endorsement, but the project will proceed without it.

### **Regulator Perspective**

Suzanne Dahl noted the state's position is that the waste is mixed no matter how it is treated and stored. If it will continue to be stored at Hanford, the state will assert its authority to regulate it. The state has taken a hands off approach in the debate of whether the Waste Isolation Pilot Plant (WIPP) will accept the waste; that is between DOE and WIPP. Ecology has committed to a fast permitting schedule because the TRU packaging facility is a fairly simple one.

### **Committee Discussion**

- Committee members Jeff Luke removed himself from this discussion.
- Is there currently a classification for the waste DOE wants to characterize as TRU? Doug responded the waste has been managed as high level but that doesn't mean it is. Based on process records and piping diagrams, it is most likely the waste is only TRU.
- Gerry Pollet wanted to know why this is not part of the proposed tank closure Environmental Impact Statement (EIS). Steve responded that they are attempting to determine if an adequate amount of National Environmental Protection Act (NEPA) coverage already exists.

- Al Boldt commented there are other definitions for high-level waste. The NRC must confirm that the material is TRU. This decision is not solely DOE's.
- Several committee members commented the characterization work will need to be done regardless and what DOE is proposing makes common sense. The preliminary work that needs to be done, including the characterization effort, should be supported. If the waste can be identified as TRU waste, safely packed, and accepted by WIPP, this plan can be fully supported. Doug will work on drafting advice for the committee to prepare for the September Board meeting.

### **Status of Supplemental Technologies**

Billie Mauss, DOE-ORP, and Rick Raymond, CH2MHill Hanford Group (CHG) presented a brief update on the status of supplemental technologies. Alternatives currently being studied include cast stone, steam reforming products, and bulk vitrification. The next step will be to try bulk vitrification employing simulants. Two 4x8x20 boxes will be completed in June. Also in June, actual tank waste from the archived samples will be formulated into the supplemental forms and will begin the testing process. Final reports from this should be available in August or September. Rick emphasized that this is a screening for the purpose of making a recommendation; DOE is not making a final deployment decision at this time.

### **Committee Discussion**

- What is the timeline for the project? The currently approved and authorized baseline is in place through the selection process and calls for waste line qualification and the completion of design to start in 2007.
- Several committee members commented they would be interested to hear what standards will be used to qualify the waste forms for the down select.
- Committee members commented they are concerned there would not be sufficient information to determine any supplemental technology's comparability to glass in time for a down select. Billie clarified that other criteria in addition to performance will be studied. These include life cycle costs, safety and environmental performance, and others. This is a point of reduction of options; the decision is not cold and hard. It is a decision on where to invest more money. Rick added that others may be worthy of more research and that even further in the process they may find the wrong selection was picked.

### **Proposed Amendment to the Consent Decree for Tanks S102 and S112**

Andy Stevens briefly discussed the progress with tanks S102 and S112, which are two of the twenty-nine to undergo interim stabilization. Instead of interim stabilization for these, DOE will retrieve the material to the TPA requirements, saving money, time and

risk. The results were deemed worthy enough to attempt to overcome the Consent Decree hurdle. This agreement is now going out for public comment.

### **Handouts**

- Characterization vs. Classification, Doug Huston, Oregon Department of Energy, May 22, 2003
- Technetium Ion Exchange, Robert Gilbert, May 22, 2003
- Press Release: Office of River Protection, May 6, 2003
- US. Department of Energy Response to Advice, Keith Klein and Roy Schepens, May 22, 2003

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### **Attendees**

#### **HAB Members and Alternates**

Ken Bracken	Doug Huston	Todd Martin
Jim Curdy	Sandra Lilligren	Maynard Plahuta
Harold Heacock	Jeff Luke	Gerry Pollet (by phone)

#### **Others**

Yvonne Sherman, DOE-RL	Jean Vanni, Ecology	Suzanne Heaston, BNI
Leif Erickson, DOE-ORP	Ken Niles, Oregon Office of Energy	Scott Saunders, BNI
Greg Jones, DOE-ORP		Ken Rueter, BNI
Billie Mauss, DOE-ORP		Bryan Kidder, CH2MHill
Erik Olds, DOE-ORP		Fred Mann, CH2MHill
Steve Wiegman, DOE-ORP		Rick Raymond, CH2MHill
		Liana Herron, EnviroIssues
		Lynn Lefkoff, EnviroIssues
		Sharon Braswell, Nuvotec
		John Coffman, Thor Treatment Technologies
		Steve Piccolo, WGI